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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,731	12/16/2003	Ho Uk Song	29936/39880	3574
4743	7590	05/30/2006	EXAMINER	
MARSHALL, GERSTEIN & BORUN LLP 233 S. WACKER DRIVE, SUITE 6300 SEARS TOWER CHICAGO, IL 60606			NGUYEN, HIEP	
		ART UNIT	PAPER NUMBER	
			2816	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/736,731	SONG, HO UK
	Examiner Hiep Nguyen	Art Unit 2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 21 March 2006.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-4 and 6-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-4 and 6-19 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: Item [0025] of the specification is objected to because it does not clearly disclose the functioning of the off-chip drivers. It does not disclose how the off-chip drivers can be turned on-off sequentially in response to the delay times. Therefore, the new limitations in claims 1, 3, 6 and 11 have no support in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4 and 6-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 1, 3, 6 and 11, the recitation “ wherein the total number of the off-chip drivers to be activated at the same time... and the activated off-chip drivers sequentially generate the output signals in response to the delay time” is indefinite because it is not clear as to the total number of the off-chip drivers are turned on simultaneously or the are turned on at different times and stay on after these different times. Claim 1 does not clearly recite how the off chip drivers are sequentially turned on. If the off chip drivers (OCD) (100-1) and (100-2) are turned on at time t1; it is not clear how the rest of the OCDs are turned on sequentially. There is no timing chart or drawing that support the sequential turning on/off of the OCDs. Item [0025] of the specification does not clearly disclose the switching of these OCDs. It is not clear what the recitation “sequentially” in the claim is meant by. It is not clear as to only

the first one of the OCDs is turned on and the rest of the OVDs are turned off then the first OVD is turned off and the second OVD is turned on etc. in a sequence. If the OCDs are turned on in a sequence then the drivability will vary sequentially with time and that is not the goal of a driver circuit that needs an adjustable, selectable output strength. As understood by the Examiner the strength of the output of the output driver (300) varies sequentially with time because the OVDs are turned on/off sequentially. Moreover, figure 2 of the present application shows that the delays circuit (100b) has no effect on the sequential control of the OVDs. The delays are used to delay the input data only. Clear explanation is required.

Claims 2, 4, 7-10 and 12-19 are rejected under 35 U.S.C. 112, 1st paragraph because of the technical deficiencies of claims 1, 3, 6 and 11.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirasaka (US Pat. 6,134,691).

Regarding claims 1 and 3, figure 5 of Hirasaka shows an off-chip driver comprising a plurality of delay circuits (D10-DL2) having different delay times; a plurality of off-chip drivers that comprise switches and input circuit of recording amplifier (101). Note that circuit (101) has k inputs corresponding to the number of delay circuits. Control circuit (506) comprises a shift register (504) and a decoder (507). One of ordinary skill in the art recognizes that the output of the decoder (507) has at least two high/low outputs for controlling the switches of the off-chip drivers. Therefore, at least two of the off-chip drivers that are activated at the same time. The drivability of the off-chip driver circuit depends on the number of activated off-chip drivers.

Allowable Subject Matter

Claims 6-15, 18 and 19 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 2, 4, 16 and 17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 6-15, 18 and 19 would be allowable because the prior art of records (US. 6,134,691) fails to teach or suggest an off-chip driver circuit comprising a predriver circuit coupled to an output driver circuit as called for in claims 6 and 11.

Claims 2, 4, 16 and 17 would be allowable because the prior art of records (US. 6,134,691) fails to teach or suggest an off-chip driver circuit comprising an off-chip driver including first and second inverters and an NAND gate as called for in claims 4, 8, 13 and 16-19.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hiep Nguyen whose telephone number is (571) 272-1752. The examiner can normally be reached on Monday to Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hiep Nguyen

05-23-06



TUANT. LAM
PRIMARY EXAMINER